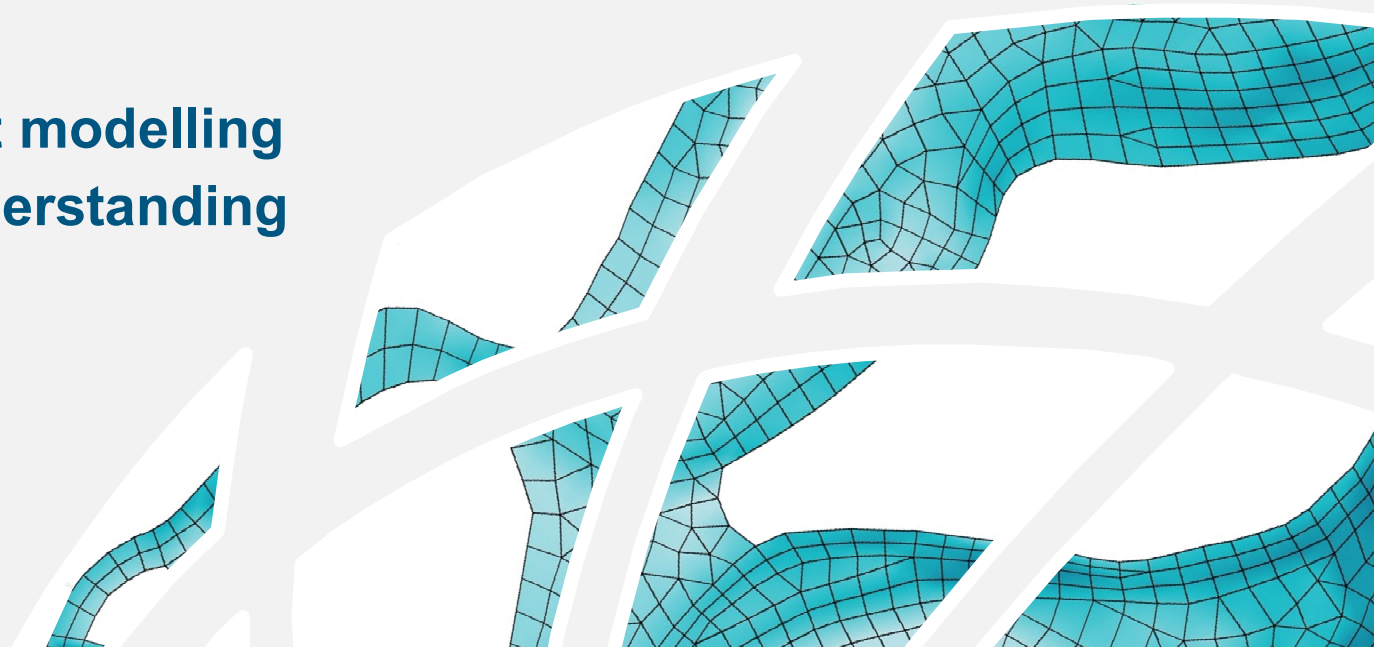
Speed science at TUFLOW!

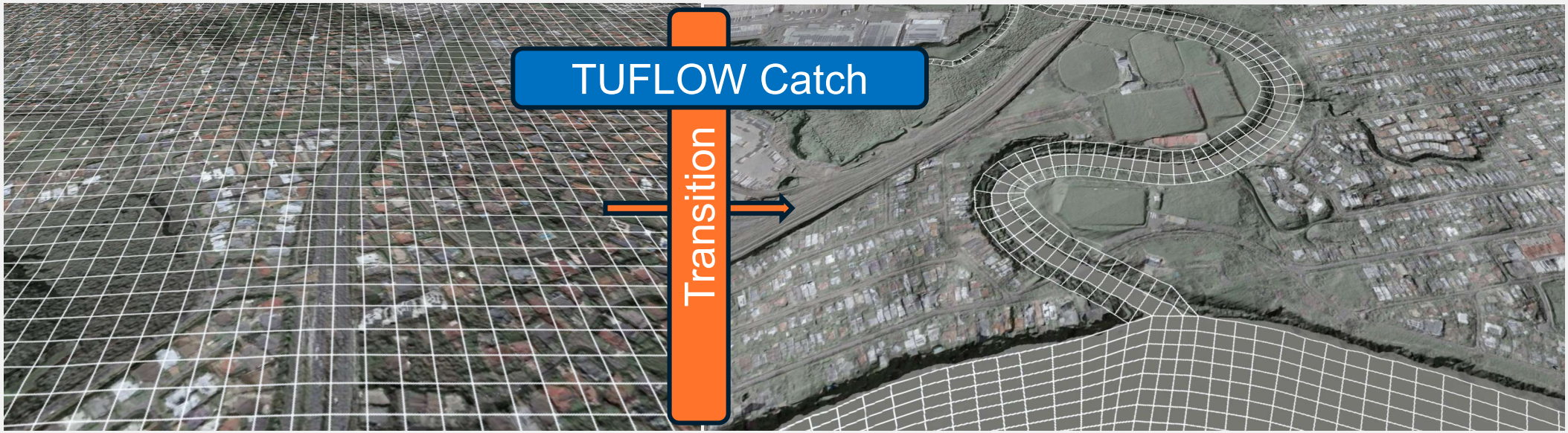
1. Integrated catchment modelling
2. Receiving model understanding



Water Quality Symposium
Queenstown, April 2024

Integrated catchment modelling

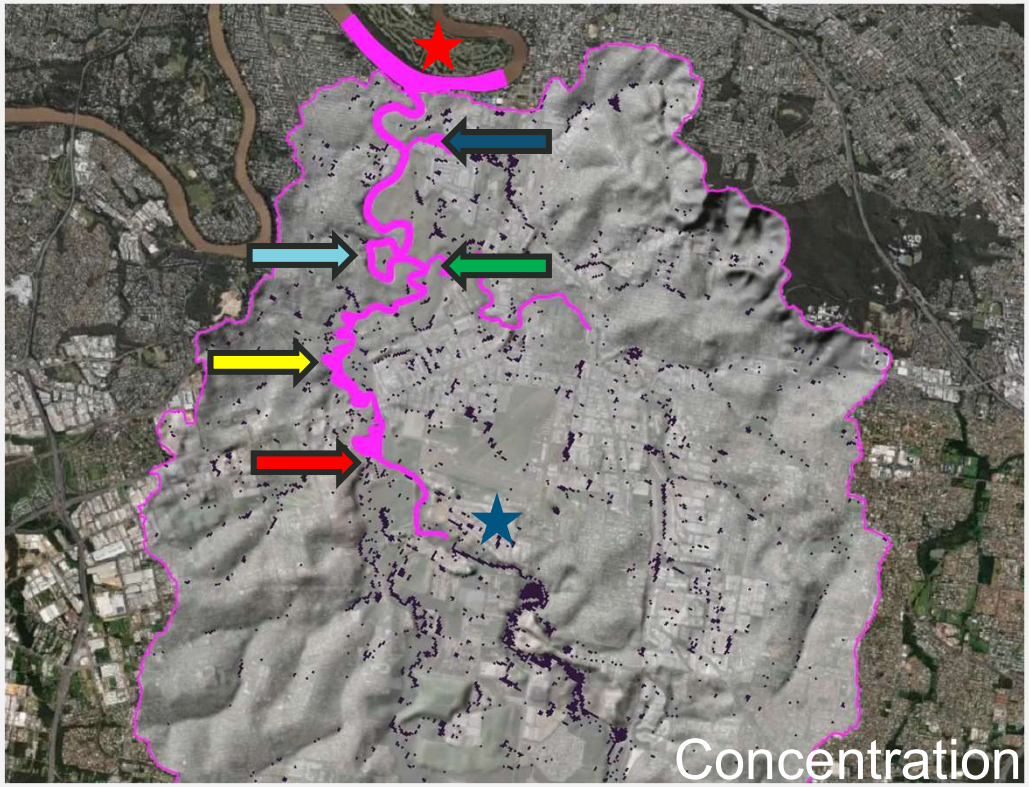
- TUFLOW HPC
  - **2D fixed grid and 1D pipe network** modelling
  - Catchment runoff, flood inundation, urban drainage, advection dispersion
- TUFLOW FV
  - **Flexible mesh** 1D, 2D, **3D** modelling
  - Hydrodynamics, heat (atmospheric exchange), advection dispersion
  - Sediment transport, particle tracking, water quality

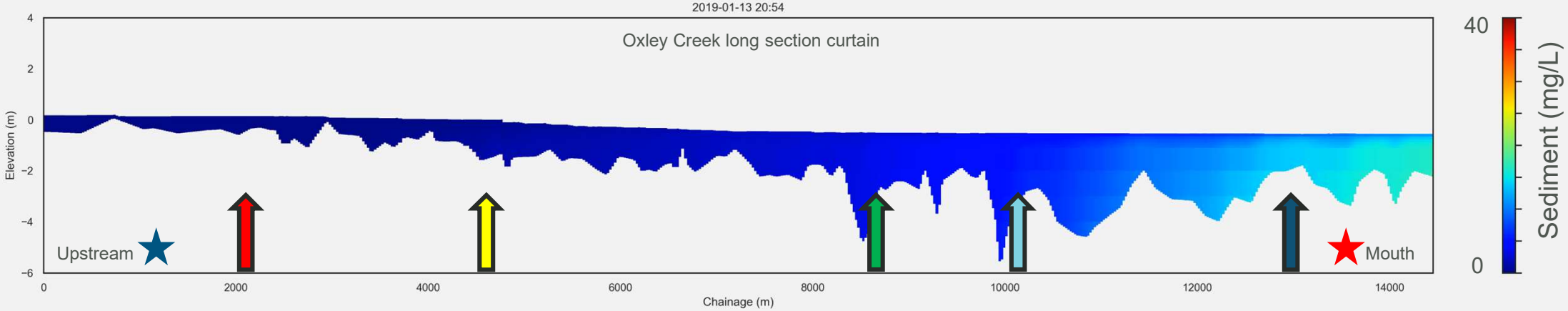


TUFLOW

BMT

- Arrows are key lateral inflows by colour
- Colour contours are the same on both animations (0 – 40 mg/L)





Receiving model understanding

Provision of

- Diagnostic outputs

Consideration of

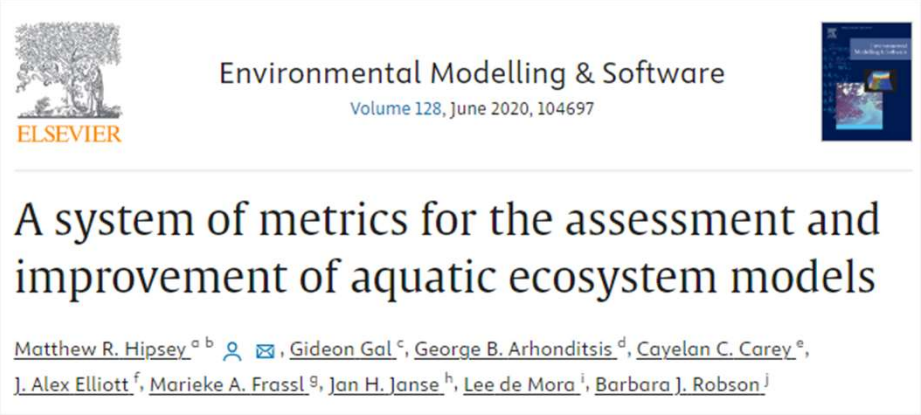
- Mass fluxes
- Mass balance

} understanding

- Not just concentrations – compliance

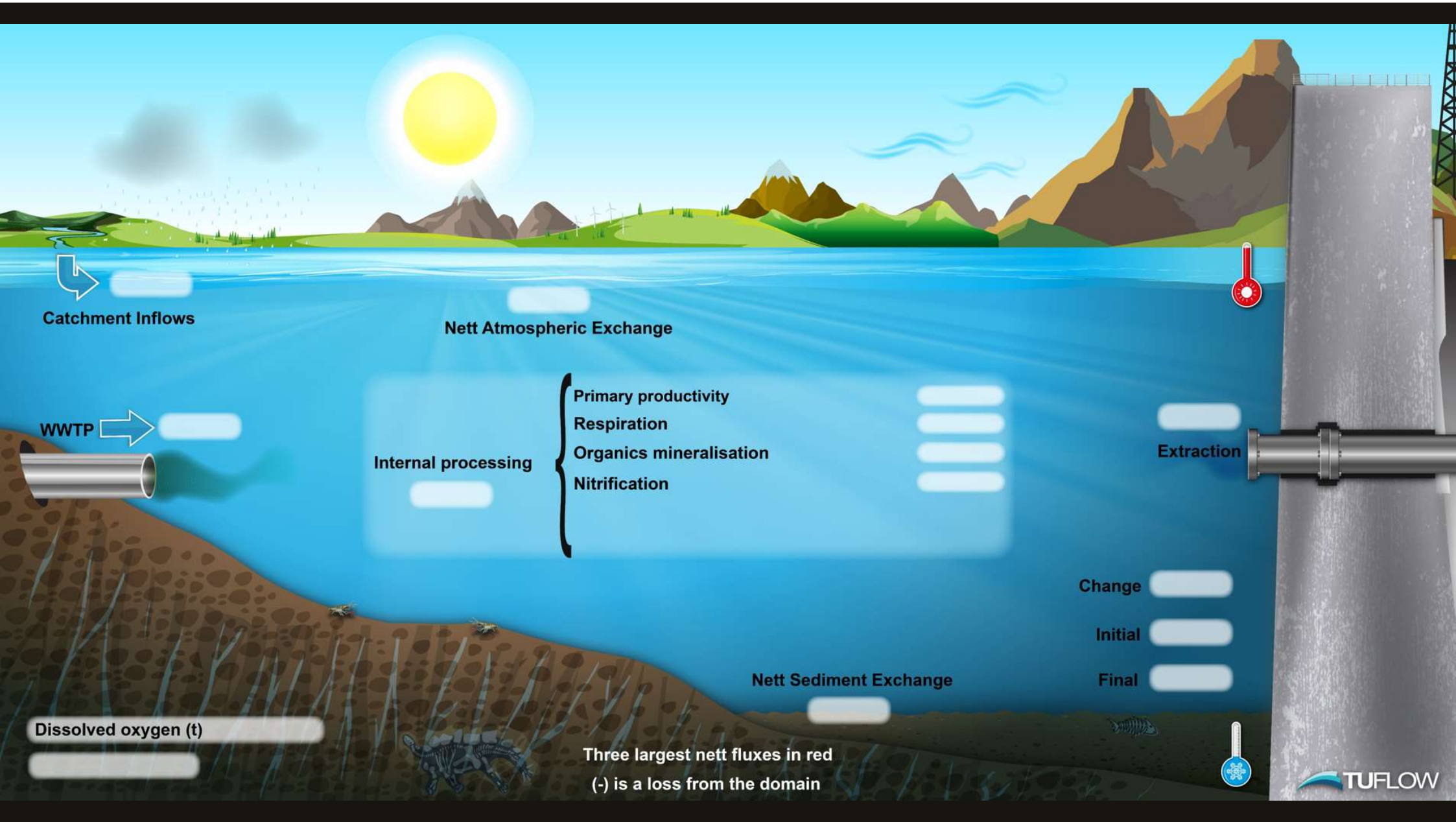
Avoid

- ‘Right answers’ for the wrong reasons
- Endless calibration and peer review processes



TUFLOW

BMT


Catchment Inflows
Nett Atmospheric Exchange
WWTP
Internal processing
Primary productivity
Respiration
Organics mineralisation
Nitrification
Extraction
Change
Initial
Final
Nett Sediment Exchange
Dissolved oxygen (t)
Three largest nett fluxes in red
(-) is a loss from the domain
TUFLOW